

# Monitoring and Tracking Onsite Sewage Disposal Systems in Coastal Alabama

## Alabama Coastal Nonpoint Pollution Control Program



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[outdooralabama.com/public-lands](http://outdooralabama.com/public-lands)

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# OSDS Managers in Alabama

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- Alabama Department of Public Health (ADPH)
  - Governed by State Board of Health\*
  - Establishes OSDS Regulations
- Alabama Onsite Wastewater Board (AOWB)
  - Licensing Board for Manufacturers, Installers, and Pumpers
- Local Health Department
  - Implements regulatory programs locally
  - Permits pumpers in each county
- Alabama Onsite Wastewater Association (AOWA)
  - Professional association for this industry

# Licensing Issues

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- All Manufacturers, Installers, and Pumpers must be licensed by AOWB
  - Established by Alabama Legislature in 1999
  - Initial Examination; Various Certification Levels
  - Annual Continuing Education Requirement
  
- All Pumpers must also receive an annual permit from each County Health Department where it conducts business
  - Annual Truck and Record Inspection
  - Recordkeeping requirements: Name, location, amount pumped, disposal site, etc.
  - Although records are required to be kept by the pumper, records have not always been collected or utilized by the LHD

# Notable Regulatory Items

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- All new installations or system repairs require a permit from LHD prior to installation
- Septic Tank maintenance is the responsibility of the homeowner
- Effluent Filters Mandated in 2004
  - Should trigger homeowners when maintenance is needed
- Mobile County Water Supply Protection Ordinance
  - Mandatory maintenance within watershed of the City's water supply reservoir

# Monitoring/Tracking History

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- Paper Permit Records
  - Limited, inconsistent data collection
- Proprietary, DOS-Based database software used to track permits during 1980s and 1990s
  - Widely used throughout the state
  - Limited spatial information
- Statewide, MS Access Database developed for permit tracking around 2001
  - Still has limited spatial information
  - Records from old database were never imported
- Maintenance has never been consistently tracked

# The Challenge

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With existing personnel and limited additional funding, develop a GIS-compatible system for routinely tracking OSDS permits, installations, inspections, repairs and maintenance.

In 2003, ACNPPCP and the local health departments in the coastal area set out to accomplish this task through a series of steps...



Rest Area

# Step 1: Technology Enhancements

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APPROACH: Provide funds to Local Health Departments to purchase GIS and GPS hardware, software and training.

- In return, each Health Department would collect GPS readings on all new permits issued, and enter such information into the tracking database

FUNDING: \$20,000 Federal (\$10K/County)

- FY04 CZMA Section 309 Funding Utilized
- Section 309 funds utilized because nonpoint pollution was identified as an issue of concern under Alabama's recent assessment of *cumulative and secondary impacts*
- 100% Federal funding

TIMEFRAME: Initiated, Fall 2003

- Equipment purchased, data collection continues

# Step 2: Maintenance Data Collection

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APPROACH: Utilize existing authority to routinely collect pumper records.

- Develop a form for pumpers to use when submitting data
- Hold meetings for pumpers prior to launching new data collection program
- Subsidize postage costs
- Collect records monthly from pumpers and enter them into database

FUNDING: \$20,000 (\$10K/County)

- FY03 CZMA Section 306 Funding Utilized
- 1:1 Matching funds

TIMEFRAME: Fall 2004

- Record collection began January 1, 2005



# Step 3: Historic Data

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APPROACH: Utilize GIS technologies and existing data to develop a remote sensed inventory of potential septic system locations.

- A probabilistic model has been developed to utilize the following GIS data to determine (with a great deal of uncertainty) the likelihood of a septic tank being in a certain spot:
  - County Tax Parcels (and assessment information)
  - Building Locations; Lot size
  - Sewer data (and buffers thereof)
  - Municipal Boundaries

FUNDING: \$N/A; Being developed by ACNPPCP staff

TIMEFRAME: Initiated, Spring 2004

- Data collection nearly complete

# Step 4: Assessment

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APPROACH: Analyze existing data to get a baseline understanding of system installation, repair, maintenance and failure rates.

- Research being conducted by University of South Alabama
- Utilizes existing digital database and random sampling of paper records
- Timeframe 1998-2004
- Will include spatial (watershed level) analysis of records
- Will include forward projections aimed at identifying "return interval"

FUNDING: \$12,500 Federal

- FY04 CZMA Section 306 Funding Utilized

TIMEFRAME: Initiated, Summer 2005

- Expected completion Spring 2006

# Next Steps: FY06 Efforts

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APPROACH: Continue data collection efforts that are underway and establish a voluntary maintenance notification system.

- Continue collecting GPS readings on all inspections
- Continue collecting pumper records
- Establish a voluntary notification program whereby any system that has gone three years without record of maintenance activity is mailed a reminder that the Health Department and EPA recommend pumping every 3-5 years.
- Compare data on “reminders issued” versus “pumper records received” to gauge success of program

FUNDING: \$40,000 Federal (\$20K/County)

- FY06 CZMA Section 306 Funding Utilized

TIMEFRAME: October 2005 – September 2006

# Underlying Assumption

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In theory, every system will return to the Local Health Department for one reason or another (maintenance, repair (expansion), home inspection or failure).

Over time, the system we are developing will allow us to track the life of each septic system in a spatial database.

This will lead to expanded capabilities for:

- Identifying soil and system types that are prone to failure
- Assessing the cause and effect relationship between OSDS and surface water quality

# Some Lessons Learned

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- Limited personnel is the single greatest challenge
  - Data entry and geocoding are time consuming
- “Repair” does not always mean “Failure”
  - Most repair permits are initiated by home additions
  - We may need to better define “failure” in our tracking



# Questions?

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